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1972 PERFORMANCE OF COMMERCIAL SOYBEANS IN ILLINOIS

(WITH 1971-1972 AVERAGES)

UNIVERSITY OF ILLINOIS
AUGUST 1972

By G.L. Ross, J.F. Duncan,
and D.W. Graffis

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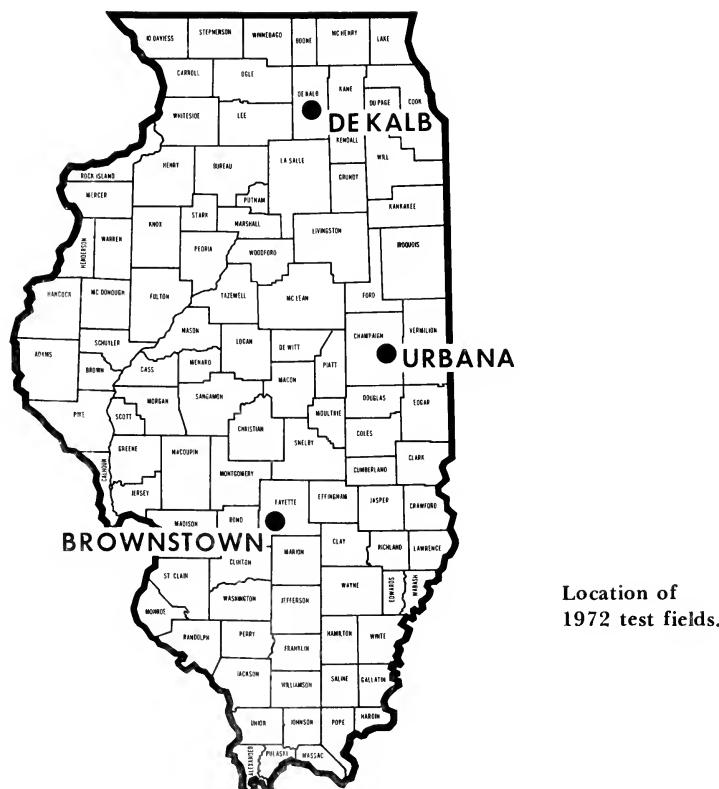
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CIRCULAR 1067 UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN
COLLEGE OF AGRICULTURE COOPERATIVE EXTENSION SERVICE

The University of Illinois commercial soybean testing program was started in 1969 as a result of requests by seedsmen to test their private varieties. The number of participating individuals has also increased.

This commercial soybean testing program intends to provide an unbiased, objective, and accurate testing of all varieties entered. The tests are conducted on as uniform a soil as is available in the testing area. Small plots are used to reduce the chance of soil and climatic variations occurring between one variety plot and another.

The results of this test should help you judge the merits of private varieties in comparison with other private and public varieties. Since your soils and management may differ from those of the test location, you may wish to plant variety test strips of the higher performing varieties on your farm. The results printed in this circular should help you decide which varieties you will try.



PLAN OF THE TESTS

Selection of entries. Soybean producers in Illinois and surrounding states were invited to enter varieties, brands, or blends in the 1972 Illinois soybean performance trials. To help finance the testing program, a fee of 30 dollars was charged for each entry entered by the seed producer. Most of these varieties, brands, or blends are commercially available, but experimental varieties were also entered by producers.

Entries. A total of 85 entries were tested in 1972. These are listed in Tables 1, 2, and 3.

Number and location of tests. Three separate tests were conducted in Illinois in 1972. These sites represent major soils and maturity zones of the state.

Field-plot design. The tests were set up in a randomized complete block design with four replications. Each variety plot was three rows wide and 16 feet long. The middle row of each plot was harvested to measure yield.

Fertility and weed control. All test locations were at a high level of fertility. A herbicide was used at all test locations to control weeds.

Method of planting and harvest. All plots were hand-planted and harvested to insure maximum precision. However, no allowances were made for beans that may have been lost in harvest due to shattering.

MEASURING PERFORMANCE

Yield. Soybean yield (see Tables 1, 2, and 3) was measured in bushels (60 pounds) per acre at a moisture content of 12 percent. An electronic moisture tester was used for all moisture readings.

Lodging. The amount of lodging was rated shortly before harvest. The following scores were used to compare entries:

1. Almost all plants erect.
2. All plants leaning slightly or a few plants down.
3. All plants leaning moderately (45°), or 25 to 50 percent of the plants down.
4. All plants leaning considerably, or 50 to 80 percent of the plants down.
5. Almost all plants down.

Maturity. Maturity was stated as the date when approximately 95 percent of the pods were ripe.

Height. Height was measured at or shortly before harvest time. It is the average length of plants from the ground to the tip of the main stem.

Comparing entries. In any test of plant material, it is impossible to measure performance exactly. Samples may vary, soils may not be uniform, and many other conditions may produce variability. Results of repeated tests are more reliable than those of a single year or a single strip test. When one variety consistently outyields another at several test locations and over several years of testing, the chances are good that this difference is real and should be considered in selecting a variety. However, yield is not the only indicator. You should also consider maturity and lodging.

As an aid in comparing soybean varieties, brands, and blends, certain statistical tests have been devised. One test is Bayes L.S.D. When two entries in a trial are compared, and the difference between them is greater than the tabulated L.S.D. value, the entries are said to be "significantly different."

GROWING CONDITIONS ON 1972 TEST FIELDS

DeKalb. The DeKalb test was located on the University's Northern Illinois Research Center near Shabbona in DeKalb County. Richard Bell is the field manager and Derreld L. Mulvaney is the area agronomist in charge of research at the center. The soil type is Flanagan silt loam, a dark brown adequately drained soil of high fertility. The area was in soybeans in 1971. The 1972 growing conditions were wetter than normal and especially an unusually wet spring. Planting and harvesting were done on May 23 and October 20 respectively.

Urbana. This test was located on the Agronomy South Farm of the University of Illinois at Urbana-Champaign in Champaign County. M.G. Oldham is the farm manager. The field on which the test plots were grown was a level heavy-textured Drummer silty clay loam. This area was in soybeans in 1970 and 1971. Rainfall May through July was slightly below average and August and September were much above average. Planting was done on May 19. Harvesting was on October 9 and 10.

Brownstown. This test was located on the University's Brownstown Research Center in Fayette County. D.E. Millis is the Agronomist in charge. The test plots were located on a Cisne silt loam, a poorly drained, gray prairie soil with a well-developed claypan. Natural fertility of this soil is not high, but good fertilization practices and crop rotations have brought the yield potential of the field up to a moderately high level. Rainfall was below normal in 1972, especially in May, June, and July. Planting and harvesting were done on May 17 and September 29 respectively.

SOURCES OF SEED

| | | |
|---------------------------|---|-----------------|
| Anjo Soybeans | Anstett Hybrid Seed | Kokomo, Ind. |
| Apache II Soybeans | J.M. Schultz Seed Co. | Dieterich |
| Bellatti Soybeans | Louis Bellatti | Mt. Pulaski |
| Cherokee Soybeans | J.M. Schultz Seed Co. | Dieterich |
| F.F.R. Soybeans | Farmers Forage Research Coop | Lafayette, Ind. |
| F-37 Soybeans | Funk Bros. Seed Co. | Bloomington |
| I.V.R. Soybeans | Improved Variety Research, Inc. | Adel, Iowa |
| Marshall Soybeans | Improved Variety Research, Inc. | Adel, Iowa |
| McKoy Soybeans | Donald McKenzie | Malta |
| Morton Soybeans | Roy A. Morton and Sons, Inc. | Bowen |
| Peterson Soybeans | Peterson Seed Co. | Waterloo, Iowa |
| Seedmaker Soybeans | Seedmakers, Inc. | Princeville |
| S.R.F. Soybeans | Soybean Research Foundation, Inc. | Mason City |
| Super Soy Soybeans | Stewart Hybrids, Inc. | Princeville |
| Ver-Ben Soybeans | Le Sage Bros. | Manteno |
| Washington Soybeans | J.M. Schultz Seed Co. | Dieterich |
| XK Soybeans | L. Teweles Seed Co. | Clinton, Wisc. |

Table 1. DeKalb (Planted in 30-inch rows)

| Entry | Total acre yield (bu.) | Maturity | Lodging score | Height (in.) | 2-year averages (1971-1972) | | |
|----------------------------------|---------------------------------|----------|------------------|-----------------|--------------------------------|------------------|-----------------|
| | | | | | Acre yield | Lodging score | Height (in.) |
| McKoy 1100 | 49.1 | Oct. 10 | 2.4 | 43.2 | ... | ... | ... |
| Peterson 105 ^a | 48.7 | Oct. 9 | 2.2 | 41.0 | 49.4 | 2.1 | 40.5 |
| F-37D | 48.2 | Oct. 10 | 2.1 | 43.0 | ... | ... | ... |
| Peterson 2120 | 48.2 | Oct. 16 | 2.4 | 40.8 | ... | ... | ... |
| Marshall | 48.1 | Oct. 13 | 3.3 | 38.0 | 48.9 | 2.8 | 37.8 |
| F.F.R. 955048 | 46.0 | Oct. 4 | 2.1 | 43.0 | ... | ... | ... |
| Apache II | 45.8 | Oct. 7 | 1.9 | 39.0 | ... | ... | ... |
| Hark | 44.9 | Oct. 2 | 1.6 | 41.0 | 45.3 | 1.3 | 38.2 |
| Peterson 2100 | 43.4 | Oct. 8 | 2.4 | 42.5 | 47.5 | 2.0 | 41.2 |
| McKoy | 43.2 | Oct. 12 | 2.3 | 43.2 | 45.0 | 1.8 | 37.8 |
| Amsoy 71 | 42.0 | Oct. 12 | 2.7 | 44.0 | 44.6 | 2.5 | 43.5 |
| XK-585 ^a | 42.0 | Oct. 15 | 2.8 | 40.8 | ... | ... | ... |
| XK-505 | 41.4 | Oct. 11 | 1.7 | 41.8 | 43.0 | 1.4 | 41.6 |
| Anjo | 41.4 | Oct. 16 | 3.0 | 37.5 | ... | ... | ... |
| S.R.F. X7065 Exp. | 41.3 | Oct. 10 | 2.4 | 44.2 | ... | ... | ... |
| Peterson 2105 | 41.3 | Oct. 10 | 2.6 | 40.5 | ... | ... | ... |
| Seedmaker 1-C | 40.8 | Oct. 14 | 2.1 | 44.0 | ... | ... | ... |
| S.R.F. 307 | 40.6 | Oct. 16 | 3.8 | 41.2 | 45.3 | 3.0 | 43.4 |
| Super-Soy 440 ^a | 40.2 | Oct. 10 | 1.9 | 41.0 | 45.9 | 1.5 | 40.1 |
| Seedmaker Exp. 641 | 40.2 | Oct. 15 | 2.3 | 37.0 | ... | ... | ... |
| Bellatti Exp. 26 | 38.8 | Oct. 16 | 2.9 | 42.8 | 44.5 | 2.4 | 41.1 |
| Corsoy | 38.6 | Oct. 5 | 2.2 | 40.2 | 43.7 | 2.2 | 40.9 |
| Seedmaker 2-A | 38.2 | Oct. 2 | 2.2 | 38.2 | ... | ... | ... |
| S.R.F. 150 | 37.4 | Oct. 2 | 2.0 | 39.0 | 40.7 | 1.5 | 36.2 |
| Beeson | 35.1 | Oct. 10 | 2.3 | 40.0 | 42.2 | 1.7 | 39.9 |
| F.F.R. 950386 | 33.1 | Oct. 11 | 2.2 | 40.5 | ... | ... | ... |
| Bellatti 4PA Exp. | 31.1 | Oct. 15 | 4.2 | 37.2 | 41.0 | 4.1 | 39.1 |
| Av. of all entries | 41.7 | ... | 2.5 | 40.7 | ... | ... | ... |
| Av. of 2-year entries .. | ... | ... | ... | ... | 44.8 | 2.2 | 40.4 |
| L.S.D. 1972 | 4.2 | ... | 0.4 | 3.3 | ... | ... | ... |
| L.S.D. for 2-year entries .. | ... | ... | ... | ... | 2.5 | 0.3 | 1.9 |
| C.V. | 7.2 | ... | ... | ... | 2.7 | ... | ... |

^a Indicates brand or blend.

Table 2. Urbana (Planted in 30-inch rows)

| Entry | Total acre yield (bu.) | Maturity | Lodging score | Height (in.) | 2-year averages (1971-1972) | | |
|----------------------------------|---------------------------------|----------|------------------|-----------------|--------------------------------|------------------|-----------------|
| | | | | | Acre yield | Lodging score | Height (in.) |
| Peterson 125 ^a | 49.8 | Oct. 2 | 2.8 | 44.0 | 51.9 | 2.9 | 44.2 |
| Teweles Exp. 6 | 49.4 | Sept. 30 | 1.8 | 45.0 | ... | ... | ... |
| Cutler | 47.8 | Oct. 6 | 2.4 | 49.0 | 49.0 | 2.3 | 48.2 |
| F.F.R. 955048 | 47.0 | Sept. 24 | 2.0 | 42.2 | ... | ... | ... |
| Cherokee | 46.8 | Sept. 27 | 2.6 | 41.2 | ... | ... | ... |
| I.V.R. 2818 | 46.4 | Sept. 26 | 3.2 | 40.8 | 47.6 | 3.0 | 41.4 |
| Williams | 46.2 | Sept. 30 | 1.9 | 44.0 | ... | ... | ... |
| Peterson 105R ^a | 45.5 | Sept. 24 | 2.0 | 45.5 | 45.2 | 2.8 | 45.1 |
| S.R.F. X7065 Exp. | 45.4 | Sept. 23 | 2.3 | 41.5 | ... | ... | ... |
| S.R.F. 150 | 45.3 | Sept. 14 | 1.2 | 35.0 | 45.6 | 1.6 | 37.5 |
| Peterson 2120 | 44.7 | Oct. 1 | 2.8 | 46.0 | ... | ... | ... |
| Morton 333B ^a | 44.5 | Sept. 25 | 2.4 | 42.5 | 47.1 | 2.8 | 44.2 |
| Peterson 2100 | 44.4 | Sept. 22 | 2.2 | 42.0 | ... | ... | ... |
| Seedmaker 1-E | 43.2 | Sept. 28 | 1.8 | 44.8 | 44.0 | 2.2 | 46.6 |
| F-37-U | 42.5 | Sept. 23 | 2.1 | 40.5 | ... | ... | ... |
| XK-505 | 42.4 | Sept. 23 | 1.6 | 42.0 | 47.7 | 2.3 | 42.8 |
| Amsoy 71 | 42.4 | Sept. 24 | 2.0 | 43.0 | 45.4 | 2.6 | 44.0 |
| Seedmaker 1-G | 41.9 | Oct. 1 | 1.9 | 45.2 | ... | ... | ... |
| Morton 444 ^a | 41.9 | Oct. 5 | 2.8 | 44.5 | ... | ... | ... |
| XK-585 ^a | 41.6 | Sept. 26 | 1.7 | 42.5 | 44.4 | 2.5 | 44.0 |
| Seedmaker Exp. 641 .. | 41.4 | Sept. 28 | 1.6 | 42.0 | ... | ... | ... |
| Teweles Exp. 5 | 41.1 | Sept. 21 | 1.2 | 35.2 | ... | ... | ... |
| Peterson 2105 | 41.1 | Sept. 23 | 2.1 | 41.0 | ... | ... | ... |
| F.F.R. 950548 | 40.8 | Sept. 28 | 2.1 | 44.8 | ... | ... | ... |
| S.R.F. 400 | 40.6 | Sept. 30 | 2.8 | 44.5 | 42.7 | 3.4 | 46.2 |
| Seedmaker 1-C | 39.3 | Sept. 24 | 2.4 | 43.2 | ... | ... | ... |
| S.R.F. 307 | 39.2 | Sept. 27 | 2.1 | 47.0 | 43.0 | 3.0 | 47.5 |
| Morton M-72 ^a | 39.2 | Sept. 30 | 1.8 | 46.0 | ... | ... | ... |
| Bellatti L263 | 39.0 | Sept. 30 | 2.9 | 45.8 | ... | ... | ... |
| Seedmaker 2-E | 38.3 | Sept. 28 | 2.6 | 46.2 | ... | ... | ... |
| Bellatti L263A Exp. | 38.1 | Oct. 2 | 2.6 | 43.8 | 38.4 | 2.8 | 45.4 |
| Ver-Ben | 37.5 | Sept. 25 | 2.2 | 50.0 | ... | ... | ... |
| Bellatti 4PA Exp. | 35.1 | Sept. 24 | 3.6 | 38.8 | ... | ... | ... |
| Av. of all entries | 42.9 | ... | 2.2 | 43.2 | ... | ... | ... |
| Av. of 2-year entries ... | ... | ... | ... | ... | 45.5 | 2.6 | 44.4 |
| L.S.D. 1972 | 3.3 | ... | 0.5 | 3.1 | ... | ... | ... |
| L.S.D. for 2-year entries ... | ... | ... | ... | ... | 2.9 | 0.4 | 1.2 |
| C.V. | 6.2 | ... | ... | ... | 3.0 | ... | ... |

^a Brand or blend.

Table 3. Brownstown (Planted in 30-inch rows)

| Entry | Total acre yield (bu.) | Maturity | Lodging score | Height (in.) | 2-year averages (1971-1972) | | |
|---------------------------------|---------------------------------|----------|------------------|-----------------|--------------------------------|------------------|-----------------|
| | | | | | Acre yield | Lodging score | Height (in.) |
| Williams | 38.9 | Sept. 21 | 1.1 | 37.2 | ... | ... | ... |
| Wayne | 37.8 | Sept. 17 | 1.3 | 35.0 | 32.0 | 1.2 | 35.9 |
| Seedmaker 1-G | 37.7 | Sept. 18 | 1.6 | 36.8 | 31.3 | 1.3 | 36.9 |
| Washington | 36.5 | Sept. 19 | 2.1 | 40.5 | ... | ... | ... |
| S.R.F. 307 | 35.7 | Sept. 17 | 1.7 | 36.8 | 31.5 | 1.4 | 37.1 |
| Peterson 125 ^a | 35.6 | Sept. 26 | 1.2 | 38.0 | ... | ... | ... |
| S.R.F. 400 | 35.6 | Sept. 21 | 1.7 | 40.8 | 29.7 | 1.4 | 38.4 |
| XK-505 | 35.2 | Sept. 15 | 1.1 | 31.0 | ... | ... | ... |
| F.F.R. 950160 | 35.1 | Sept. 21 | 1.4 | 37.2 | ... | ... | ... |
| Cutler | 34.8 | Sept. 24 | 1.4 | 41.0 | 28.1 | 1.2 | 38.5 |
| XK-585 ^a | 34.3 | Sept. 14 | 1.5 | 34.2 | ... | ... | ... |
| Seedmaker 1-E | 34.1 | Sept. 18 | 2.0 | 34.0 | 31.6 | 1.5 | 36.0 |
| S.R.F. 450 | 34.0 | Sept. 26 | 1.3 | 41.0 | 30.2 | 1.2 | 37.9 |
| Bellatti L263 | 34.0 | Sept. 21 | 1.5 | 39.8 | 27.9 | 1.3 | 37.1 |
| Bellatti Sc. 7 Exp. | 32.6 | Sept. 27 | 1.3 | 42.8 | 26.8 | 1.1 | 41.1 |
| Amsoy 71 | 32.3 | Sept. 10 | 1.5 | 32.8 | 31.3 | 1.2 | 35.1 |
| Seedmaker Exp. 46483A | 31.6 | Sept. 24 | 1.4 | 47.8 | ... | ... | ... |
| Bellatti L263A Exp. | 30.6 | Sept. 26 | 1.4 | 42.2 | 24.3 | 1.2 | 37.9 |
| Kent | 30.5 | Sept. 28 | 1.7 | 40.0 | ... | ... | ... |
| S.R.F. X7065 Exp. | 29.7 | Sept. 10 | 1.1 | 31.5 | ... | ... | ... |
| Peterson 2120 | 29.1 | Sept. 16 | 1.6 | 34.5 | ... | ... | ... |
| F.F.R. 950548 | 27.2 | Sept. 17 | 1.8 | 35.5 | ... | ... | ... |
| Av. of all entries | 33.8 | ... | 1.5 | 37.7 | ... | ... | ... |
| Av. of 2-year entries | ... | ... | ... | ... | 29.3 | 1.3 | 37.5 |
| L.S.D. 1972 | 3.1 | ... | 0.4 | 2.3 | ... | ... | ... |
| L.S.D. for 2-year entries | ... | ... | ... | ... | 1.7 | N.S. | 1.9 |
| C.V. | 5.5 | ... | ... | ... | 2.4 | ... | ... |

^a Indicates brand or blend.

This circular was prepared by G.L. Ross, Assistant Agronomist, J.F. Duncan, Assistant Agronomist, and D.W. Graffis, Professor of Forage Crops Extension.

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